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L4	0	L3 and (centroid$1 same (coordinate$1 or co-ordinat$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2004/12/30 20:51
L5	1	artificial$4 same cluster$4 same centroid$1 same (coordinate$1 or co-ordinat$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2004/12/30 21:23

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	0	temporar$4 same artificial$4 same cluster$4 same centroid$1 same coordinate$1	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2004/12/30 20:49
L2	0	temporar$4 same artificial$4 same cluster$4 same centroid$1 same (coordinate$1 or co-ordinat$4)	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2004/12/30 20:50
L3	6	temporar$4 same artificial$4 same cluster$4	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2004/12/30 20:50
L4	0	L3 and (centroid$1 same (coordinate$1 or co-ordinat$4))	US-PGPUB; USPAT; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2004/12/30 20:51

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1 **Communication in a society of interacting perceptrons**
Joghataie, A.;
Systems, Man, and Cybernetics, 1999. IEEE SMC '99 Conference Proceedings. 1999 IEEE International Conference on , Volume: 5 , 12-15 Oct. 1999
Pages:149 - 153 vol.5

[Abstract]   [PDF Full-Text (404 KB)]   **IEEE CNF**

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1 Three-dimensional object recognition
Paul J. Besl, Ramesh C. Jain
March 1985 **ACM Computing Surveys (CSUR)**, Volume 17 Issue 1

Full text available: 🗎 pdf(7.76 MB)   Additional Information: full citation, abstract, references, citings, index terms, review

A general-purpose computer vision system must be capable of recognizing three-dimensional (3-D) objects. This paper proposes a precise definition of the 3-D object recognition problem, discusses basic concepts associated with this problem, and reviews the relevant literature. Because range images (or depth maps) are often used as sensor input instead of intensity images, techniques for obtaining, processing, and characterizing range data are also surveyed.

2 Multidimensional access methods
Volker Gaede, Oliver Günther
June 1998 **ACM Computing Surveys (CSUR)**, Volume 30 Issue 2

Full text available: 🗎 pdf(1.05 MB)   Additional Information: full citation, abstract, references, citings, index terms

Search operations in databases require special support at the physical level. This is true for conventional databases as well as spatial databases, where typical search operations include the point query (find all objects that contain a given search point) and the region query (find all objects that overlap a given search region). More than ten years of spatial database research have resulted in a great variety of multidimensional access methods to support ...

Keywords: data structures, multidimensional access methods

3 A survey of methods for recovering quadrics in triangle meshes
Sylvain Petitjean
June 2002 **ACM Computing Surveys (CSUR)**, Volume 34 Issue 2

Full text available: 🗎 pdf(3.91 MB)   Additional Information: full citation, abstract, references, citings, index terms

In a variety of practical situations such as reverse engineering of boundary representation from depth maps of scanned objects, range data analysis, model-based recognition and algebraic surface design, there is a need to recover the shape of visible surfaces of a dense 3D point set. In particular, it is desirable to identify and fit simple surfaces of known type wherever these are in reasonable agreement with the data. We are interested in the class of

quadric surfaces, that is, algebraic surfa ...

Keywords: Data fitting, geometry enhancement, local geometry estimation, mesh fairing, shape recovery

4 Data clustering: a review

A. K. Jain, M. N. Murty, P. J. Flynn
September 1999 **ACM Computing Surveys (CSUR)**, Volume 31 Issue 3

Full text available: pdf(636.24 KB) Additional Information: full citation, abstract, references, citings, index terms, review

Clustering is the unsupervised classification of patterns (observations, data items, or feature vectors) into groups (clusters). The clustering problem has been addressed in many contexts and by researchers in many disciplines; this reflects its broad appeal and usefulness as one of the steps in exploratory data analysis. However, clustering is a difficult problem combinatorially, and differences in assumptions and contexts in different communities has made the transfer of useful generic co ...

Keywords: cluster analysis, clustering applications, exploratory data analysis, incremental clustering, similarity indices, unsupervised learning

5 External memory algorithms and data structures: dealing with

massive data

Jeffrey Scott Vitter
June 2001 **ACM Computing Surveys (CSUR)**, Volume 33 Issue 2

Full text available: pdf(828.46 KB) Additional Information: full citation, abstract, references, citings, index terms

Data sets in large applications are often too massive to fit completely inside the computers internal memory. The resulting input/output communication (or I/O) between fast internal memory and slower external memory (such as disks) can be a major performance bottleneck. In this article we survey the state of the art in the design and analysis of external memory (or EM) algorithms and data structures, where the goal is to exploit locality in order to reduce the I/O costs. We consider a varie ...

Keywords: B-tree, I/O, batched, block, disk, dynamic, extendible hashing, external memory, hierarchical memory, multidimensional access methods, multilevel memory, online, out-of-core, secondary storage, sorting

6 Scalable feature selection, classification and signature generation for organizing large text databases into hierarchical topic taxonomies

Soumen Chakrabarti, Byron Dom, Rakesh Agrawal, Prabhakar Raghavan
August 1998 **The VLDB Journal — The International Journal on Very Large Data Bases**, Volume 7 Issue 3

Full text available: pdf(281.37 KB) Additional Information: full citation, abstract, citings, index terms

We explore how to organize large text databases hierarchically by topic to aid better searching, browsing and filtering. Many corpora, such as internet directories, digital libraries, and patent databases are manually organized into topic hierarchies, also called *taxonomies*. Similar to indices for relational data, taxonomies make search and access more efficient. However, the exponential growth in the volume of on-line textual information makes it nearly impossible to maintain such taxono ...

7 Model-based recognition in robot vision

Roland T. Chin, Charles R. Dyer

March 1986 **ACM Computing Surveys (CSUR)**, Volume 18 Issue 1

Full text available: 📄 pdf(4.94 MB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>, <u>review</u>

This paper presents a comparative study and survey of model-based object-recognition algorithms for robot vision. The goal of these algorithms is to recognize the identity, position, and orientation of randomly oriented industrial parts. In one form this is commonly referred to as the "bin-picking" problem, in which the parts to be recognized are presented in a jumbled bin. The paper is organized according to 2-D, 2½-D, and 3-D object representations, which are used as the basis for ...

8 The Quadtree and Related Hierarchical Data Structures
Hanan Samet
June 1984 **ACM Computing Surveys (CSUR)**, Volume 16 Issue 2

Full text available: 📄 pdf(4.87 MB)   Additional Information: <u>full citation</u>, <u>references</u>, <u>citings</u>, <u>index terms</u>

9 Fast detection of communication patterns in distributed executions
Thomas Kunz, Michiel F. H. Seuren
November 1997 **Proceedings of the 1997 conference of the Centre for Advanced Studies on Collaborative research**

Full text available: 📄 pdf(4.21 MB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>index terms</u>

Understanding distributed applications is a tedious and difficult task. Visualizations based on process-time diagrams are often used to obtain a better understanding of the execution of the application. The visualization tool we use is Poet, an event tracer developed at the University of Waterloo. However, these diagrams are often very complex and do not provide the user with the desired overview of the application. In our experience, such tools display repeated occurrences of non-trivial commun ...

10 Status report of the graphic standards planning committee
Computer Graphics staff
August 1979 **ACM SIGGRAPH Computer Graphics**, Volume 13 Issue 3

Full text available: 📄 pdf(15.01 MB)   Additional Information: <u>full citation</u>, <u>references</u>, <u>citings</u>

11 Speeding up construction of PMR quadtree-based spatial indexes
Gisli R. Hjaltason, Hanan Samet
October 2002 **The VLDB Journal — The International Journal on Very Large Data Bases**, Volume 11 Issue 2

Full text available: 📄 pdf(355.72 KB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>index terms</u>

Spatial indexes, such as those based on the quadtree, are important in spatial databases for efficient execution of queries involving spatial constraints, especially when the queries involve spatial joins. In this paper we present a number of techniques for speeding up the construction of quadtree-based spatial indexes, specifically the PMR quadtree, which can index arbitrary spatial data. We assume a quadtree implementation using the "linear quadtree", a disk-resident representation ...

Keywords: Bulk-loading, I/O, Spatial indexing

12 Object-based and image-based object representations
Hanan Samet
June 2004 **ACM Computing Surveys (CSUR)**, Volume 36 Issue 2

Full text available: 📄 pdf(1.05 MB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>index terms</u>

An overview is presented of object-based and image-based representations of objects by

their interiors. The representations are distinguished by the manner in which they can be used to answer two fundamental queries in database applications: (1) Feature query: given an object, determine its constituent cells (i.e., their locations in space). (2) Location query: given a cell (i.e., a location in space), determine the identity of the object (or objects) of which it is a member as well as the re ...

Keywords: Access methods, R-trees, feature query, geographic information systems (GIS), image space, location query, object space, octrees, pyramids, quadtrees, space-filling curves, spatial databases

13 Computational strategies for object recognition

Paul Suetens, Pascal Fua, Andrew J. Hanson
March 1992 **ACM Computing Surveys (CSUR)**, Volume 24 Issue 1

Full text available: pdf(6.37 MB)   Additional Information: full citation, abstract, references, citings, index terms, review

This article reviews the available methods for automated identification of objects in digital images. The techniques are classified into groups according to the nature of the computational strategy used. Four classes are proposed: (1) the simplest strategies, which work on data appropriate for feature vector classification, (2) methods that match models to symbolic data structures for situations involving reliable data and complex models, (3) approaches that fit models to the photometry and ...

Keywords: image understanding, model-based vision, object recognition

14 Machine learning in automated text categorization

Fabrizio Sebastiani
March 2002 **ACM Computing Surveys (CSUR)**, Volume 34 Issue 1

Full text available: pdf(524.41 KB)   Additional Information: full citation, abstract, references, citings, index terms

The automated categorization (or classification) of texts into predefined categories has witnessed a booming interest in the last 10 years, due to the increased availability of documents in digital form and the ensuing need to organize them. In the research community the dominant approach to this problem is based on machine learning techniques: a general inductive process automatically builds a classifier by learning, from a set of preclassified documents, the characteristics of the categories. ...

Keywords: Machine learning, text categorization, text classification

15 Distributional clustering of words for text classification

L. Douglas Baker, Andrew Kachites McCallum
August 1998 **Proceedings of the 21st annual international ACM SIGIR conference on Research and development in information retrieval**
Full text available: pdf(1.07 MB)   Additional Information: full citation, references, citings, index terms

16 Web clustering and usage mining: Clustering documents in a web directory

Giordano Adami, Paolo Avesani, Diego Sona
November 2003 **Proceedings of the 5th ACM international workshop on Web information and data management**
Full text available: pdf(180.53 KB)   Additional Information: full citation, abstract, references, index terms

Hierarchical categorization of documents is a task receiving growing interest due to the widespread proliferation of topic hierarchies for text documents. The worst problem of hierarchical supervised classifiers is their high demand in terms of labeled examples, whose amount is related to the number of topics in the taxonomy. Hence, bootstrapping a huge

hierarchy with a proper set of labeled examples is a critical issue. In this paper, we propose some solutions for the bootstrapping problem, imp ...

Keywords: TaxSOM, constrained clustering, digital libraries, k-means, knowledge management, taxonomy bootstrapping process, text categorization, web directories

17 A multimodal learning interface for grounding spoken language in sensory perceptions

Chen Yu, Dana H. Ballard
July 2004 **ACM Transactions on Applied Perception (TAP)**, Volume 1 Issue 1

Full text available: pdf(1.73 MB)   Additional Information: full citation, abstract, references, index terms

We present a multimodal interface that learns words from natural interactions with users. In light of studies of human language development, the learning system is trained in an unsupervised mode in which users perform everyday tasks while providing natural language descriptions of their behaviors. The system collects acoustic signals in concert with user-centric multisensory information from nonspeech modalities, such as user's perspective video, gaze positions, head directions, and hand moveme ...

Keywords: Multimodal learning, cognitive modeling, multimodal interaction

18 Geographic Data Processing

George Nagy, Sharad Wagle
June 1979 **ACM Computing Surveys (CSUR)**, Volume 11 Issue 2

Full text available: pdf(4.20 MB)   Additional Information: full citation, references, citings, index terms

19 Parallel execution of prolog programs: a survey

Gopal Gupta, Enrico Pontelli, Khayri A.M. Ali, Mats Carlsson, Manuel V. Hermenegildo
July 2001 **ACM Transactions on Programming Languages and Systems (TOPLAS)**, Volume 23 Issue 4

Full text available: pdf(1.95 MB)   Additional Information: full citation, abstract, references, citings, index terms

Since the early days of logic programming, researchers in the field realized the potential for exploitation of parallelism present in the execution of logic programs. Their high-level nature, the presence of nondeterminism, and their referential transparency, among other characteristics, make logic programs interesting candidates for obtaining speedups through parallel execution. At the same time, the fact that the typical applications of logic programming frequently involve irregular computatio ...

Keywords: Automatic parallelization, constraint programming, logic programming, parallelism, prolog

20 Requirements interaction management

William N. Robinson, Suzanne D. Pawlowski, Vecheslav Volkov
June 2003 **ACM Computing Surveys (CSUR)**, Volume 35 Issue 2

Full text available: pdf(1.24 MB)   Additional Information: full citation, abstract, references, index terms

Requirements interaction management (RIM) is the set of activities directed toward the discovery, management, and disposition of critical relationships among sets of requirements, which has become a critical area of requirements engineering. This survey looks at the evolution of supporting concepts and their related literature, presents an issues-based framework for reviewing processes and products, and applies the framework in a review of RIM state-of-the-art. Finally, it presents seven researc ...

Keywords: KAOS, KATE, Oz, Requirements engineering, Telos, WinWin, analysis and

design, composite system, deficiency driven design, dependency analysis, distributed
intentionality, interaction analysis, software cost reduction (SCR)., system architecture,
system specification, viewpoints

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21 Adaptation/load balancing: A method for decentralized clustering in large multi-agent systems   ▭

Elth Ogston, Benno Overeinder, Maarten van Steen, Frances Brazier
July 2003 **Proceedings of the second international joint conference on Autonomous agents and multiagent systems**

Full text available: 🔴 pdf(326.48 KB)   Additional Information: full citation, abstract, references, index terms

This paper examines a method of clustering within a fully decentralized multi-agent system. Our goal is to group agents with similar objectives or data, as is done in traditional clustering. However, we add the additional constraint that agents must remain in place on a network, instead of first being collected into a centralized database. To do this we connect agents in a random network and have them search in a peer-to-peer fashion for other similar agents. We thus aim to tackle the basic clus ...

Keywords: decentralized systems

22 Hierarchical representations of collections of small rectangles   ▭

Hanan Samet
September 1988 **ACM Computing Surveys (CSUR)**, Volume 20 Issue 4

Full text available: 🔴 pdf(3.68 MB)   Additional Information: full citation, abstract, references, citings, index terms

A tutorial survey is presented of hierarchical data structures for representing collections of small rectangles. Rectangles are often used as an approximation of shapes for which they serve as the minimum rectilinear enclosing object. They arise in applications in cartography as well as very large-scale integration (VLSI) design rule checking. The different data structures are discussed in terms of how they support the execution of queries involving proximity relations. The focus is on inte ...

23 Temporal sequence learning and data reduction for anomaly detection   ▭

Terran Lane, Carla E. Brodley
August 1999 **ACM Transactions on Information and System Security (TISSEC)**, Volume 2 Issue 3

Full text available: 🔴 pdf(628.31 KB)   Additional Information: full citation, abstract, references, citings, index terms

The anomaly-detection problem can be formulated as one of learning to characterize the behaviors of an individual, system, or network in terms of temporal sequences of discrete data. We present an approach on the basis of instance-based learning (IBL) techniques. To

cast the anomaly-detection task in an IBL framework, we employ an approach that transforms temporal sequences of discrete, unordered observations into a metric space via a similarity measure that encodes intra-attribute depende ...

Keywords: anomaly detection, clustering, data reduction, empirical evaluation, instance based learning, machine learning, user profiling

24 Model-based object recognition in dense-range images—a review
Farshid Arman, J. K. Aggarwal
March 1993 **ACM Computing Surveys (CSUR)**, Volume 25 Issue 1

Full text available: pdf(3.42 MB)   Additional Information: full citation, abstract, references, citings, index terms, review

The goal in computer vision systems is to analyze data collected from the environment and derive an interpretation to complete a specified task. Vision system tasks may be divided into data acquisition, low-level processing, representation, model construction, and matching subtasks. This paper presents a comprehensive survey of model-based vision systems using dense-range images. A comprehensive survey of the recent publications in each subtask pertaining to dense-range image object recogni ...

Keywords: 3D object recognition, 3D representations, CAD-based vision, dense-range images, image understanding

25 Clustering through decision tree construction
Bing Liu, Yiyuan Xia, Philip S. Yu
November 2000 **Proceedings of the ninth international conference on Information and knowledge management**
Full text available: pdf(280.62 KB)   Additional Information: full citation, references, citings, index terms

26 Machine interpretation of CAD data for manufacturing applications
Qiang Ji, Michael M. Marefat
September 1997 **ACM Computing Surveys (CSUR)**, Volume 29 Issue 3

Full text available: pdf(1.90 MB)   Additional Information: full citation, abstract, references, citings, index terms, review

Machine interpretation of the shape of a component for CAD databases is an important problem in CAD/CAM, computer vision, and intelligent manufacturing. It can be used in CAD/CAM for evaluation of designs, in computer vision for machine recognition and machine inspection of objects, and in intelligent manufacturing for automating and integrating the link between design and manufacturing. This topic has been an active area of research since the late '70s, and a significant number of computat ...

Keywords: artificial intelligence, automated process planning, computer-aided design, computer-integrated manufacturing, feature recognition, flexible automation

27 Fast supervised dimensionality reduction algorithm with applications to document categorization & retrieval
George Karypis, Eui-Hong (Sam) Han
November 2000 **Proceedings of the ninth international conference on Information and knowledge management**
Full text available: pdf(270.71 KB)   Additional Information: full citation, references, citings, index terms

28 Data allocation in distributed database systems

Peter M. G. Apers
September 1988 **ACM Transactions on Database Systems (TODS)**, Volume 13 Issue 3

Full text available: pdf(3.30 MB)   Additional Information: full citation, abstract, references, citings, index terms, review

The problem of allocating the data of a database to the sites of a communication network is investigated. This problem deviates from the well-known file allocation problem in several aspects. First, the objects to be allocated are not known a priori; second, these objects are accessed by schedules that contain transmissions between objects to produce the result. A model that makes it possible to compare the cost of allocations is presented; the cost can be computed for different cost functi ...

29 A survey of image registration techniques
Lisa Gottesfeld Brown
December 1992 **ACM Computing Surveys (CSUR)**, Volume 24 Issue 4

Full text available: pdf(5.20 MB)   Additional Information: full citation, abstract, references, citings, index terms, review

Registration is a fundamental task in image processing used to match two or more pictures taken, for example, at different times, from different sensors, or from different viewpoints. Virtually all large systems which evaluate images require the registration of images, or a closely related operation, as an intermediate step. Specific examples of systems where image registration is a significant component include matching a target with a real-time image of a scene for target recognition, mon ...

Keywords: image registration, image warping, rectification, template matching

30 Survey articles: Data mining for hypertext: a tutorial survey
Soumen Chakrabarti
January 2000 **ACM SIGKDD Explorations Newsletter**, Volume 1 Issue 2

Full text available: pdf(1.19 MB)   Additional Information: full citation, abstract, references, citings

With over 800 million pages covering most areas of human endeavor, the World-wide Web is a fertile ground for data mining research to make a difference to the effectiveness of information search. Today, Web surfers access the Web through two dominant interfaces: clicking on hyperlinks and searching via keyword queries. This process is often tentative and unsatisfactory. Better support is needed for expressing one's information need and dealing with a search result in more structured ways than av ...

31 Searching in high-dimensional spaces: Index structures for improving the performance of multimedia databases
Christian Böhm, Stefan Berchtold, Daniel A. Keim
September 2001 **ACM Computing Surveys (CSUR)**, Volume 33 Issue 3

Full text available: pdf(1.39 MB)   Additional Information: full citation, abstract, references, citings, index terms

During the last decade, multimedia databases have become increasingly important in many application areas such as medicine, CAD, geography, and molecular biology. An important research issue in the field of multimedia databases is the content-based retrieval of similar multimedia objects such as images, text, and videos. However, in contrast to searching data in a relational database, a content-based retrieval requires the search of similar objects as a basic functionality of the database system ...

Keywords: Index structures, indexing high-dimensional data, multimedia databases, similarity search

32 Bioinformatics—an introduction for computer scientists
Jacques Cohen

June 2004 **ACM Computing Surveys (CSUR)**, Volume 36 Issue 2

Full text available: pdf(261.56 KB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>index terms</u>

The article aims to introduce computer scientists to the new field of bioinformatics. This area has arisen from the needs of biologists to utilize and help interpret the vast amounts of data that are constantly being gathered in genomic research---and its more recent counterparts, proteomics and functional genomics. The ultimate goal of bioinformatics is to develop in silico models that will complement in vitro and in vivo biological experiments. The article provides a bird's eye view of the ...

Keywords: DNA, Molecular cell biology, RNA and protein structure, alignments, cell simulation and modeling, computer, dynamic programming, hidden-Markov-models, microarray, parsing biological sequences, phylogenetic trees

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33 <u>Curriculum 68: Recommendations for academic programs in computer science: a report of the ACM curriculum committee on computer science</u>
William F. Atchison, Samuel D. Conte, John W. Hamblen, Thomas E. Hull, Thomas A. Keenan, William B. Kehl, Edward J. McCluskey, Silvio O. Navarro, Werner C. Rheinboldt, Earl J. Schweppe, William Viavant, David M. Young
March 1968 **Communications of the ACM**, Volume 11 Issue 3

Full text available: pdf(6.63 MB)   Additional Information: <u>full citation</u>, <u>references</u>, <u>citings</u>

Keywords: computer science academic programs, computer science bibliographies, computer science courses, computer science curriculum, computer science education, computer science graduate programs, computer science undergraduate programs

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34 <u>View planning for automated three-dimensional object reconstruction and inspection</u>
William R. Scott, Gerhard Roth, Jean-François Rivest
March 2003 **ACM Computing Surveys (CSUR)**, Volume 35 Issue 1

Full text available: pdf(517.25 KB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>index terms</u>

Laser scanning range sensors are widely used for high-precision, high-density three-dimensional (3D) reconstruction and inspection of the surface of physical objects. The process typically involves planning a set of views, physically altering the relative object-sensor pose, taking scans, registering the acquired geometric data in a common coordinate frame of reference, and finally integrating range images into a nonredundant model. Efficiencies could be achieved by automating or semiautomating ...

Keywords: View planning, object inspection, object reconstruction, range images

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35 <u>View management in multimedia databases</u>
K. Selçuk Candan, Eric Lemar, V. S. Subrahmanian
July 2000 **The VLDB Journal — The International Journal on Very Large Data Bases**, Volume 9 Issue 2

Full text available: pdf(322.82 KB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>index terms</u>

Though there has been extensive work on multimedia databases in the last few years, there is no prevailing notion of a multimedia view, nor there are techniques to create, manage, and maintain such views. Visualizing the results of a dynamic multimedia query or materializing a dynamic multimedia view corresponds to assembling and delivering an interactive multimedia presentation in accordance with the visualization specifications. In this paper, we suggest that a non-interactive multimedia prese ...

Keywords: Interactivity, Multimedia databases, Prefetching, Result visualization/presentation, View management

36 Automated cataloging and analysis of sky survey image databases: the SKICAT system

Usama M. Fayyad, Nicholas Weir, S. Djorgovski

December 1993 **Proceedings of the second international conference on Information and knowledge management**

Full text available: pdf(1.31 MB)   Additional Information: full citation, references, index terms

37 Research track papers: Probabilistic author-topic models for information discovery

Mark Steyvers, Padhraic Smyth, Michal Rosen-Zvi, Thomas Griffiths

August 2004 **Proceedings of the 2004 ACM SIGKDD international conference on Knowledge discovery and data mining**

Full text available: pdf(323.72 KB)   Additional Information: full citation, abstract, references, index terms

We propose a new unsupervised learning technique for extracting information from large text collections. We model documents as if they were generated by a two-stage stochastic process. Each author is represented by a probability distribution over topics, and each topic is represented as a probability distribution over words for that topic. The words in a multi-author paper are assumed to be the result of a mixture of each authors' topic mixture. The topic-word and author-topic distributions are ...

Keywords: Gibbs sampling, text modeling, unsupervised learning

38 Technical reports

SIGACT News Staff

January 1980 **ACM SIGACT News**, Volume 12 Issue 1

Full text available: pdf(5.28 MB)   Additional Information: full citation

39 A collaborative planning model of intentional structure

Karen E. Lochbaum

December 1998 **Computational Linguistics**, Volume 24 Issue 4

Full text available: pdf(3.36 MB)   Additional Information: full citation, abstract, references, citings
Publisher Site

An agent's ability to understand an utterance depends upon its ability to relate that utterance to the preceding discourse. The agent must determine whether the utterance begins a new segment of the discourse, completes the current segment, or contributes to it. The intentional structure of the discourse, comprised of discourse segment purposes and their interrelationships, plays a central role in this process (Grosz and Sidner 1986). In this paper, we provide a computational model for recognizi ...

40 A self-organized file cabinet

Dawn Lawrie, Daniela Rus

November 1999 **Proceedings of the eighth international conference on Information and knowledge management**

Full text available: pdf(1.48 MB)   Additional Information: full citation, abstract, references, index terms

The self-organizing file cabinet is an information retrieval system associated with a user's physical file cabinet. It enhances a physical file cabinet with electronic information about the papers in it. It can remember, organize, update, and help the user find documents contained in the physical file cabinet. The system consists of a module for extracting electronic information about the papers stored in the file cabinet, a module for representing and storing this information in mu ...

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